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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,384	07/01/2003	Keith R. Stebbings	AMETEK 02.02	1521
7590 01/11/2005				
Attention of Norman P. Soloway HAYES SOLOWAY P.C. 130 W. Cushing Street Tucson, AZ 85701			EXAMINER TANINGCO, MARCUS H	
			ART UNIT 2878	PAPER NUMBER

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/611,384

Applicant(s)

STEBBINGS, KEITH R.

Examiner

Marcus H Tanningco

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7,10-13,15,19 and 20 is/are rejected.
- 7) ☐ Claim(s) 4,6,8,9,14 and 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/15/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the FET, lensing, and housing must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
2. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider et al. (US 6,013,919).

4. Re claims 1 and 5, Schneider et al. teaches a flame sensor comprising: a photodiode **D4** to detect an input signal (Col. 2, 44-48); an amplifier **U1A** to amplify the input signal and provide an output signal (Col. 2, 50-52); means (FET) for providing an automatic gain control (Col. 4, 14-21); and at least one capacitor providing stability to the output signal of the amplifier (Fig. 1). Although Schneider et al. fails to specify the aforementioned electronic circuitry formed on a multi-layer printed circuit board (PCB), it would have been obvious to one with ordinary skill in the art at the time the invention was made to fabricate the electronic circuitry taught by Schneider et al. onto a PCB to provide improved connections between each component and a tolerance for high temperatures. Schneider et al. also fails to teach a capacitor formed from a capacitance laminate buried in said PCB. However, in the art of capacitors, it is well known and conventional that laminate capacitors are used to replace discrete capacitors due to its electrical performance advantages. Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Schneider et al. with laminate capacitors to provide better performance at high-frequencies and high temperatures with a lower impedance.

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5. Re claim 2, Schneider et al. teaches a flame sensor operable in high temperatures as high as 250 degrees Celsius (Col. 3, 57-67; Col. 4, 1-5).

6. Re claim 3, Schneider et al. teaches a flame sensor but fails to specify at least one guard band on each layer of the PCB. It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Schneider et al. with guard bands since it is known in the art of PCB's that guard bands are a form of shielding used to provide better damping and better protection from interfering radiation.

7. Re claim 7, Schneider et al. teaches a flame sensor comprising a low pass filter (Fig. 1).

8. Re claim 10, Schneider et al. teaches a flame sensor with a response time in the range of 25 milliseconds (Col. 3, 1-8).

9. Re claims 11 and 15, Schneider et al. teaches a flame sensor comprising: a housing having a window (lens) (Col. 4, 45-58); a photodiode **D4** to detect an input signal (Col. 2, 44-48); an amplifier **U1A** to amplify the input signal and provide an output signal (Col. 2, 50-52); means (FET) for providing an automatic gain control (Col. 3, 9-26); and at least one capacitor providing stability to the output signal of the amplifier (Fig. 1). Although Schneider et al. fails to specify the aforementioned electronic circuitry formed on a multi-layer printed circuit board (PCB), it would have been obvious to one with ordinary skill in the art at the time the invention was made to fabricate the electronic circuitry taught by Schneider et al. onto a PCB to provide improved connections between each component and a tolerance for high temperatures.

Schneider et al. also fails to teach a capacitor formed from a capacitance laminate buried in said PCB. However, in the art of capacitors, it is well known and conventional that laminate capacitors are used to replace discrete capacitors due to its electrical performance advantages.

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Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Schneider et al. with laminate capacitors to provide better performance at high-frequencies and high temperatures with a lower impedance.

10. Re claim 12, Schneider et al. teaches a flame sensor operable in high temperatures as high as 250 degrees Celsius (Col. 3, 57-67; Col. 4, 1-5).

11. Re claim 13, Schneider et al. teaches a flame sensor but fails to specify at least one guard band on each layer of the PCB. It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Schneider et al. with guard bands since it is known in the art of PCB's that guard bands are a form of shielding used to provide better damping and better protection from interfering radiation.

12. Re claim 19, Schneider et al. teaches a flame sensor comprising a low pass filter (Fig. 1).

13. Re claim 20, Schneider et al. teaches a flame sensor with a response time in the range of 25 milliseconds (Col. 3, 1-8).

Allowable Subject Matter

14. Claim 21 is allowed.

15. Claims 4, 6, 8, 9, 14, and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter:

Claims 4 and 14 recite the limitation of a flame sensor comprising guard bands disposed at substantially identical positions in each layer of the PCB.

Claims 6 and 16 recite the limitation of a flame sensor comprising tracks of equal potential disposed at substantially identical locations on each of the interior layers of the PCB.

Claims 8 and 17 recite the limitation of a flame sensor comprising guard bands on each layer of the PCB that are substantially identically shaped.

Claims 9 and 18 recite the limitation of a flame sensor comprising tracks on each layer of the PCB that are substantially identically shaped.

Claim 21 recites the limitation of a method for producing a UV flame sensor comprising the step of placing the guard bands in identical positions on each layer of the PCB and mimicking tracks of equal potential on the interior layers of the PCB.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wheeler (US 3,689,773) discloses a flame monitor system and method using multiple radiation sensors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus H Taningco whose telephone number is (571) 272-1848. The examiner can normally be reached on M - F 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MT



DAVID PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800